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PROGNOSTIC FACTORS FOR CHANGES OF ERECTILE FUNCTION BEFORE AND AFTER TREATMENT IN SLEEP APNEA PATIENTS: IS THERE A ROLE FOR NOCTURIA? A CONTROLLED STUDY

Hypothesis / aims of study

Associations between sleep disorders and both nocturia and erectile dysfunction have been well established. Treatment with CPAP improves nocturia, nocturnal urine volume and erectile function in patients with sleep apnea. We aimed to identify prognostic factors and a possible role for nocturia in erectile function improvements in patients treated for sleep apnea with CPAP (Continuous Positive Airway Pressure).

Study design, materials and methods

All subjects were asked for nocturia before treatment with CPAP device and completed three questionnaires related to sleep difficulty, quality of life and erectile function before and after treatment with CPAP: the Athens Insomnia Scale (AIS), the Functional Outcomes of Sleep Questionnaire (FOSQ), and the International Index of Erectile Function (IIEF) questionnaire. AIS is designed for quantifying sleep difficulty (subscales AIS5 and AIS8), and FOSQ to assess the impact of excessive sleepiness on daily behaviors and quality of life. A group of patients who did not receive CPAP treatment served as controls. Demographic parameters, comorbidities (diabetes, hypertension, thyroid disease, depression) were investigated for prognostic value in various regression models.

Results

One hundred thirty seven patients were used in the analysis, twenty of them were controls. Patients were followed up to one year. Significant improvements were noted in treated patients in all questionnaires (all p-values < 0.001), while no change was identified in untreated patients. Nocturia before treatment had a negative association with erectile function ($r=-0.23$, $p=0.022$) and sleep disorder (AIS5 & AIS8 $r=0.32$ and 0.31 , respectively, $p<0.001$; FOSQ $r=-0.26$, $p=0.004$), but only showed a non-significant trend to correlate with response to treatment, measured either by AIS (AIS5 $r=-0.16$, $p=0.105$; AIS8 $r=-0.14$, $p=0.165$) or by FOSQ ($r=0.16$, $p=0.108$). In multivariate analysis of the treated patients, FOSQ before treatment, FOSQ $\Delta\%$ change (both $p<0.0001$), arterial hypertension ($p=0.046$) and BMI ($p=0.06$) were identified as positive prognostic factors for erectile function $\Delta\%$ change, while AIS5 before ($p=0.013$), diabetes ($p=0.033$) and age ($p=0.039$) as negative prognostic factors.

Interpretation of results

Despite the lack of fully prospective character of the study and the absence of properly designed statistical sample size, results of this controlled study suggest interrelations between sleep disorders, nocturia and erectile function, which deserve further investigation, and in association with comorbidities and demographic characteristics.

Concluding message

Treatment with CPAP improved sleep parameters, sleep-related quality of life and erectile function. A number of factors may be associated with erectile function change after treatment (FOSQ score, FOSQ $\Delta\%$ change, AIS5 score, arterial hypertension, BMI, diabetes and age). Nocturia before treatment had a negative association with erectile function and sleep disorder/quality of life, but did not significantly affect response to treatment.

Disclosures

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